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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------------------------------|-------------|----------------------|----------------------------|------------------|
| 10/516,461 | 12/03/2004 | Xavier Hugon | 62819 (4590-353) | 2868 |
| 33308 | 7590 | 02/03/2006 | EXAMINER STEIN, JAMES D | |
| LOWE HAUPTMAN GILMAN & BERNER, LLP 1700 DIAGNOSTIC ROAD, SUITE 300 ALEXANDRIA, VA 22314 | | | ART UNIT 2874 | PAPER NUMBER |

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,461

Applicant(s)

HUGON ET AL.

Examiner

James D. Stein

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on pre-amendment filed on 12/03/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1204.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is responsive to the preliminary amendment filed on 12/03/04, which has been entered and considered.

Information Disclosure Statement

The references submitted on the IDS filed on 12/03/04 have been considered (note attached signed copy of PTO-1449).

Specification

Applicant's cooperation in correcting any errors in the specification of which applicant may become aware is requested.

Drawings

Four (4) sheets of formal drawings filed 12/03/04 have been accepted.

Claim Objections

Claim 1 is objected to because of the following informalities: There is lack of antecedent basis for "the second output guide" recited in the last line of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over [USPUB 2002/0196549] to Randall et al. ("Randall"), which discloses a related optical filtering component.

With regard to claim 1, at least figs. 1 and 5C of Randall shows an optical filtering component comprising a tunable (at least abstract) wavelength selective filter 110 capable of

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transmitting a spectral band centered around wavelength (fig. 15) and reflecting light whose wavelength is outside said band (definition of a band pass filter); an input guide 104 conducting light radiation 101 to the filter 110 wherein the input guide 105 (551 in fig. 5C) conducts the radiation 101a to the filter 110 in order to perform a first pass through it; and means 120 for returning a first part 101b of the radiation 101 reflected by the filter 110 during the first pass in order to perform a second pass through it (at least ¶0063-0065, fig. 1); and a collimation means 105/103 common to the input guide 104, to the return means 120 and to the second output guide 552 (fig. 5C, ¶0084).

Therefore, the claimed invention is disclosed by Randall except for the spectral bands to be “narrow”. Fig. 15a suggests the wavelength bands passed by filter 110 and wavelengths reflected by the filter (outside bands) when the device is used to compensate for dispersion in MUX communication devices. These wavelength bands appear to be narrow. One of ordinary skill in the art would expect the wavelength bands passed by filter 110 to be as narrow as required by the specification of the input to the system; and conventional optical communication systems include information contained in optical signals within very narrow wavelength bands. Furthermore, multilayer interference filters, such as the filter 110 taught by Randall, are generally narrow band pass filters. For example “Understanding Fiber Optics,” by Jeff Hecht teaches that such filters transmit a *narrow* range of wavelengths (page 362). One of ordinary skill in the art would expect the pass bands of the filter 110 to be narrow. Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to ensure the wavelength bands passed by the filter 110 of Randall were narrow bands in order to compensate

for dispersion in modern optical communication systems, which have information contained in narrow wavelength bands.

With regard to claim 2, fig. 5C of Randall shows a second output guide 552 conducting a fourth part of the radiation reflected by filter 510 (110 in fig. 1).

With regard to claims 3, 11 and 12, in addition to the rejection of claims 1 and 2 previously discussed above, collimating lens 105/103 is shown to be arranged, with regard to the optical path of the device, on the one hand, the filter 110, and on the other hand, the input guide 104, the return means 120 and the second output guide 552 (fig. 5C).

With regard to claim 4, in addition to the rejection of claim 1 previously discussed above, collimating lens 103/105 is taught to be a graded index lens, or GRIN lens (§0059).

With regard to claim 5, in addition to the rejection of claim 4 previously discussed above, fig. 1 shows the focal plane of lens 403/405 coinciding with an input face of the lens 405/403.

With regard to claims 6, 13 and 14, in addition to the rejection of claims 1, 2 and 3 previously discussed above, fig. 1 shows the return means 120 directing the first part of the radiation to the filter 110 with the same incidence as the input guide 104 (i.e. the return light path is the same as the incoming light path).

With regard to claims 7 and 15-17, in addition to the rejection of claim 1-4 previously discussed above, Randall teaches that the means for tuning the device comprises tilting the filter 110 (at least §0028).

With regard to claims 8 and 18-19, in addition to the rejection of claims 1-3 previously discussed above, optical filtering device 400 includes means 104/551 for inserting radiation whose length is substantially centered on the given wavelength.

With regard to claims 9 and 21-22, in addition to the rejection of claims 1-3 previously discussed above, the limitations recited are directed to a *method of forming* the reflective element, while the claims are directed to an *apparatus*, and therefore cannot be given patentable weight. Such method limitations can only be given weight in a claim with a method style preamble. Moreover, Randall teaches that the reflective element 120 can be a MLIF reflector (¶0064), which are commonly formed from ion implantation (ion exchange) and glass plate photolithography, which are well-known methods of forming optical articles. It would have been obvious at the time of the invention to one of ordinary skill in the art to form the optical return means from either of said methods because they are conventional methods commonly used to form such articles.

With regard to claims 10 and 22-23, in addition to the rejection of claims 1-3 previously discussed above, the claimed invention has been disclosed and discussed above except for an amplifier. Amplifiers are well known in the art be used in situations where optical attenuation occurs. Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art to include and amplifier in the optical filtering device of Randall in order to amplify the optical signal to compensate for any attenuation caused by the filter 110.

Conclusion

The art made of record and not relied upon is considered pertinent to applicant's disclosure: [USPAT 6,891,676] to Ford et al, which discloses a similar optical filtering device. The filing date of this reference is earlier than filing date of the corresponding PCT application (PCT/FR03/01653) but later than applicant's earliest priority date (06/06/2002).

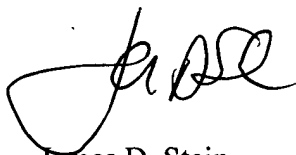
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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein
Patent Examiner, AU 2874



SUNG PAK
PRIMARY EXAMINER